VOL. X, NO. 3 MARCH, 1918

THE Journal of Home Economics

For those interested in Homemaking, Institution Management, and Educational Work in Home Economics

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THE JOURNAL OF HOME ECONOMICS is published monthly by the American Home Economics Association.

$2.00 A YEAR. FOREIGN $2.35. CANADIAN $2.20. SINGLE COPIES 25 CENTS

HOW TO REMIT. Remittances should be sent by Draft on New York, Express Order or Postal Money Order, payable to the American Home Economics Association. Currency, unless mailed in a registered letter, is at the sender's risk.

CHANGE IN ADDRESS. Notice of change in address should be sent Two Weeks before the date of issue on which the change is to take effect. The subscriber's Old Address should be clearly indicated in addition to the New Address.

AMERICAN HOME ECONOMICS ASSOCIATION 1211 CATHEDRAL ST., BALTIMORE, MD.

Entered as second class matter at the Baltimore Post Office

THE JOURNAL OF HOME ECONOMICS is on sale at John Wanamaker's, Philadelphia; The Old Corner Book Store, Boston; A. C. McClurg's, Chicago; Baltimore News Company, Baltimore; Woodward and Lothrop, Washington

TWO LETTERS

To the Departments of Home Economics in the Colleges and Universities:

The United States Food Administration recognizes the excellent work that is being done by the departments of Home Economics in the colleges and universities. Thousands of young women are being prepared to grapple with the problems concerned with food and the home. Graduates of these departments will find themselves called to places of usefulness far surpassing in number and responsibility anything heretofore thought possible. Issues that demand the rarest talent and the highest scientific training await their attention. This splendid army of specially trained young women is counted on by the Food Administration to give willing and effective service.

Faithfully yours,

HERBERT HOOVER.

To the Women in the Graduating Classes of the Colleges and Universities:

The United States Food Administration calls you to its service. Our need is so great that we appeal to you to prepare yourselves as best you can, and to enlist for the great work that must be done.

There will be diversity of tasks and therefore diversity of talent and training can be used. All our questions now center in food; its production, its distribution, its use, its conservation. The more you know about these things the more valuable you will be, and the greater will be your service to humanity.

If you have not already done so, we urge you to pursue studies dealing especially with food, but these should be reinforced by courses in chemistry, physiology and economics. It will be well, too, if you have acquired the arts of public presentation of your knowledge to the people who so much need it.

Fortunately most of our educational institutions now offer courses which give the necessary training for this work, but to the others an appeal is being sent to provide such instruction wherever it is possible.

More detailed suggestions and directions will be published soon. Today your country asks you to resolve to do what you can in this the hour of extreme peril to the democratic peoples of the world.

Faithfully yours,

HERBERT HOOVER.

THE

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DIETARY STUDY AT VASSAR COLLEGE

ANNIE LOUISE MACLEOD AND MARY A. GRIGGS

In February, 1917, a dietary study was made at Vassar College with the object of obtaining accurate data as to the amount, kind, and quality of the food consumed by Vassar students, and its nutritive value as compared with the theoretical requirements of active girls of the age of these students.

Method of Study. One hall, Davison, was selected as typical, since similar conditions prevail throughout the College. The study began at noon, February 8, and ended with breakfast, February 22. The group under observation numbered 115, of whom 7 were faculty, 17 servants (including 2 men), and 91 were students whose average age wa 19.4 years, height 5 feet, 4 inches, and weight 123.9 pounds. During the first week 2030 meals were served, and during the second 1897, making a total of 3927.

A careful inventory was taken of all supplies on hand at the beginning and at the end of the experimental period, and all food materials brought to the hall during this period were weighed. In the case of foods such as bread, cake, puddings, which were cooked in the college bake-shop and sent to the hall ready to serve, the raw materials used in their manufacture were weighed in the bake-shop, thus obviating the necessity for an infinitude of analyses. In calculating the food values, the figures given for the average composition of American foods in O. E. S. Bulletin 28 of the Department of Agriculture were used wherever possible. Where average values were not obtainable special analyses were made.

The inedible waste, or refuse, consisting of bones, seeds, parings, was collected and weighed dai y. With this there was inevitably some edible

material, the amount depending partly on the care employed in separating the refuse from the food materials. The edible waste included the scraps from the plates and all food left over in such a condition that it could not be utilized again. This was weighed, run through a meat chopper, and thoroughly mixed, a 1 per cent sample taken for analysis, and a few drops of formalin added to prevent decomposition. At the end of each week all the material collected was dried, mixed, and analyzed. The total amount of waste, edible and inedible, was subtracted from the amount of food used, to give the amount actually consumed.

Food. The food was plain but appetising, and showed considerable variation. The meals were well balanced, and particularly successful in the avoidance of the fixed routine which makes so many institutional diets unbearably monotonous. The raw materials used were of excellent quality, and, in general, well cooked. The following is a typical day's menu.

Breakfast

Apple sauce
Ralston Puffed rice Cream
Omelet Hard and soft boiled eggs
Rolls Bread Butter
Coffee Chocolate Milk

Luncheon

Appledore soup Crackers
Hamburg steak Brown sauce
Potatoes au gratin Tomatoes
Graham and white bread Cinnamon biscuit Butter
Chocolate Tea Milk

Dinner

Duchess soup Crackers
Boiled lamb Caper sauce
Potato puff Parsnips Banana fritters
Dinner bread Butter
Chocolate Bavarian cream

Waste. The total waste represented 26 per cent of the food purchased, 10.6 per cent of the waste being edible and 15.6 per cent inedible material.

It was impossible to compare our results with those of other institutions since in the majority of cases where a dietary study has been made either the waste has not been separated into edible and inedible or the investigator has neglected to define his terms precisely.

TABLE 1

Weights of food and nutrients consumed

KIND OF FOOD	AMOUNT PURCHASED	TOTAL COST	TOTAL NUTRIENT AND ENERGY VALUE			
			Protein	Fat	Carbohydrate	Fuel value
	pounds	*dollars*	*grams*	*grams*	*grams*	*calories*
Animal food						
Bacon	40.5	8.10	1,745.0	10,912.0		105,192.4
Beef:		71.55				
Hamburg steak	40.0		3,792.0	1,923.0		32,478.1
Steak	61.0		4,925.0	4,704.0		62,036.3
Top loin	12.0		969.0	909.0		12,056.6
Suet	16.0		341.0	5,937.0		54,797.4
Flank	27.25		2,299.0	2,460.0		31,334.6
Fat	14.0		260.0	5,213.0		47,962.2
Trimmings	48.5		2,420.0	4,224.0		47,696.0
Roast beef	114.5		7,479.0	10,387.0		123,402.2
Chicken	240.0	68.50	14,914.0	13,390.0		180,170.3
Ham	25.0	5.25	2,506.0	2,336.0		31,048.4
Lamb:		39.70				
Shoulder	75.75		4,948.0	8,109.0		92,772.2
Breast and neck	43.5		2,881.0	4,025.0		47,751.3
Liver and lungs	2.5		229.0	32.0		1,202.6
Fat	4.5		84.0	1,676.0		15,416.1
Racks	14.0		895.0	1,315.0		15,412.1
Legs	34.0		2,452.0	2,097.0		28,685.0
Gelatine	0.18	0.12	78.0	0.1		311.7
Lard	9.5	1.65		4,309.2		38,782.8
Liver	14.0	4.90	1,282.7	196.9	158.8	7,538.1
Pork:		16.58				
Head	9.0		167.4	563.3		5,739.3
Feet	29.0		539.3	907.6		10,325.6
Fat	6.25		102.1	2,548.7		23,346.7
Hams	31.5		1,928.9	2,700.6		41,021.0
Shoulders	25.75		1,401.6	3,480.6		36,931.8
Loins	37.5		3,284.9	2,211.3		32,761.3
Belly	30.25		891.9	7,766.1		73,462.5
Sausage	58.0	15.64	5,103.9	6,340.2		77,477.4
Unused;						
Beef, cooked	6.5	1.95	772.4	1,028.9		12,349.7
Lamb, cooked	3.5	0.85	312.8	201.7		3,066.5
Soup stock	11.0	0.10	289.4	74.9		1,831.7
Fat sold	30.0	1.20		13,608.0		122,472.0
Total unused	51.0	4.10	1,374.6	14,913.5		139,719.9
Total meat	1,012.9	227.89	66,476.6	96,761.3	158.8	1,137,392.1
Fish:						
Clams	19.9	2.25	189.0	9.0	126.0	1,341.0
Codfish	23.25	2.79	2,921.2	31.6		11,969.2

TABLE 1—*Continued*

KIND OF FOOD	AMOUNT PURCHASED	TOTAL COST	TOTAL NUTRIENT AND ENERGY VALUE			
			Protein	Fat	Carbohydrate	Fuel value
	pounds	*dollars*	*grams*	*grams*	*grams*	*calories*
Fish—Continued						
Finnan haddie	23.0	6.00	1,648.4	10.4		6,687.2
Haddock	52.0	3.47	1,981.3	47.2		8,350.0
Oysters	24.25	4.80	659.9	143.0	362.9	5,378.2
Salmon	2.0	0.32	176.9	68.0		1,319.6
Total fish	144.40	19.63	7,576.7	309.2	488.9	35,045.2
Dairy products						
Butter	123.0	50.43	557.9	47,424.1		429,048.5
Cheese	6.0	1.56	783.9	977.2	8.2	11,963.2
Cream	266.9	26.28	3,027.2	19,373.8	5,448.9	208,268.6
Eggs	106.25	34.00	5,735.2	4,482.1		63,279.7
Egg whites	1.5	0.48	83.6	1.4		347.0
Milk	1,508.7	40.78	22,583.7	21,899.4	34,217.8	424,300.6
Total dairy products	2,012.35	153.53	32,771.5	94,158.0	39,674.9	1,137,207.6
Total animal food	3,169.7	401.05	106,824.8	191,228.5	40,322.6	2,309,644.9
Vegetable food						
Cereals:						
Barley	2.0	0.11	77.1	10.0	705.8	3,221.6
Bread, graham	81.5	4.08	3,290.1	665.4	19,260.5	96,191.0
Bread, white	228.75	11.44	9,442.3	1,660.2	55,304.6	273,929.4
Cornflakes	1.7	0.22	42.2	11.5	621.1	2,756.7
Cornmeal	3.0	0.06	125.2	25.9	1,026.0	4,837.9
Cornstarch	0.75	0.04			306.2	1,224.8
Crackers, oyster	15.25	2.10	781.7	726.3	4,876.8	29,170.7
Flour, wheat	130.25	5.86	6,617.1	590.8	44,252.0	208,793.6
Flour, rye	2.0	0.17	61.7	8.2	714.0	3,176.6
Grapenuts	5.5	0.70	287.4	25.0	1,974.2	9,271.4
Hominy grits	4.87	0.50	183.8	13.3	1,749.9	7,854.5
Krumbles	1.56	0.18	87.3	9.9	573.0	2,730.3
Malt Breakfast food	4.37	0.30	234.6	9.9	1,497.0	7,015.5
Quaker Oats	2.87	0.16	218.1	95.4	864.8	5,190.2
Rice	7.75	0.41	281.2	10.5	2,777.2	12,328.1
Rice, puffed	0.12	0.05	45.4	1.7	448.7	1,991.7
Rolls, wheat	105.0	10.50	6,619.9	2,000.4	28,529.2	158,600.0
Sphaghetti	2.5	0.33	137.5	4.5	866.8	4,057.7
Tapioca	3.0	0.32	5.4	1.4	1,197.5	4,824.2
Triscuit	0.93	0.18	46.2	6.2	342.9	1,612.2
Cream of wheat	3.93	0.34	196.8	25.0	1,365.1	6,472.6
Wheat food	4.12	0.32	208.0	31.9	1,415.2	6,779.9
Wheat, puffed	0.37	0.18	17.9	2.4	132.7	624.0
Wheat, shredded	4.5	0.60	214.7	28.6	1,592.9	7,487.8
Total cereal food	616.59	39.15	29,221.6	5,964.4	172,394.1	860,142.4

TABLE 1—*Continued*

KIND OF FOOD	AMOUNT PURCHASED	TOTAL COST	TOTAL NUTRIENT AND ENERGY VALUE			
			Protein	Fat	Carbohydrate	Fuel value
	pounds	*dollars*	*grams*	*grams*	*grams*	*calories*
Vegetables:						
Black beans, dry...	2.75	0.17	293.9	23.5	778.6	4,501.5
Beets, cooked.....	7.25	1.25	75.6	3.3	243.4	1,305.7
Beets, raw.....	42.5	0.31	250.6	19.3	1,484.4	7,113.7
Cabbage.....	16.0	0.38	101.6	14.5	348.4	1,930.5
Carrots.....	12.25	0.34	50.0	11.1	411.2	1,944.7
Celery.....	14.25	1.77	58.2	6.5	168.1	963.7
Corn, canned.....	30.0	3.12	381.7	163.6	2,590.1	13,359.6
Lettuce.....	20.25	4.23	110.2	27.6	266.4	1,754.8
Onions.....	49.5	3.47	314.3	67.4	1,998.3	9,857.0
Parsnips.....	53.75	2.13	317.0	97.5	2,633.1	12,677.9
Peas, canned.....	53.00	4.08	867.0	48.2	2,360.1	13,342.2
Potatoes.....	640.5	28.82	5,229.6	290.5	42,708.1	194,365.3
Radishes.....	7.5	0.38	30.6	34.0	136.1	972.8
Tomatoes, canned.	20.2	3.05	109.9	18.3	366.3	2,069.5
Turnips.....	44.0	0.66	179.6	20.0	1,137.6	5,448.8
Total vegetables.	1,013.7	53.85	8,369.8	845.3	57,630.2	271,607.7
Fruit:						
Apples.....	91.5	0.92	124.5	124.5	10,376.0	19,548.1
Apple sauce.....	2.0	0.05	1.8	7.3	337.4	1,422.5
Bananas.....	107.5	6.67	390.1	195.0	6,973.0	31,207.4
Blueberries.....	13.0	1.05	35.4	35.4	754.8	3,479.4
Grapefruit.....	55.0	3.85	299.4		2,370.1	10,678.0
Currant jelly	16.25	1.84	5.9		415.7	1,686.4
Lemons.....	10.5	0.70	33.4	23.9	281.5	1,474.7
Oranges.....	118.5	3.36	322.5	53.8	4,568.9	20,049.8
Orange marmalade.	7.3	2.24	19.9	3.32	2,807.9	11,610.0
Peaches, canned...	1.5	0.11	4.8	0.7	73.4	319.1
Plums, preserved..	9.25	1.04	21.0		2,521.8	10,171.2
Prunes.....	14.25	1.50	116.4		4,020.6	16,548.0
Raisins.....	5.0	0.24	59.0	74.8	1,726.0	7,813.2
Strawberries, canned.....	39.0	4.25	123.8		4,245.6	17,477.6
Total fruit.....	490.55	27.82	1,557.9	548.6	35,579.1	153,485.4
Miscellaneous:						
Almond paste.....	1.0	0.60	6.0	15.7	4.9	184.9
Catsup.....	0.5	0.12	3.4	0.5	27.9	129.7
Chili sauce.....	2.5	0.18	106.6	87.3	793.8	4,387.3
Chocolate.....	4.25	1.10	248.7	938.9	584.2	11,781.7
Cocoa.....	3.5	0.67	343.0	458.9	598.7	7,896.9
Icing.....	5.0	0.73			1,998.1	7,992.4
Maple syrup.....	18.0	1.66			5,829.7	23,318.8
Molasses.....	11.6	0.35	126.3		3,646.6	15,091.6

TABLE 1—*Concluded*

KIND OF FOOD	AMOUNT PURCHASED	TOTAL COST	TOTAL NUTRIENT AND ENERGY VALUE			
			Protein	Fat	Carbohydrate	Fuel value
	pounds	*dollars*	*grams*	*grams*	*grams*	*calories*
Miscellaneous—Continued						
English walnuts	0.5	0.21	37.7	143.9	36.5	1,591.9
Olives	18.5	1.70	66.4	1,676.3	705.6	18,179.2
Olive oil	5.75	1.35		2,608.2		23,473.8
Pickles	15.5	2.09	34.9	21.0	188.6	1,083.0
Baked beans	27.5	2.33	1,010.4	848.2	2,894.0	23,251.4
Granulated sugar	158.0	12.25			71,668.8	286,675.2
Powdered sugar	1.0	0.08			453.6	1,814.4
Total miscellaneous	273.1	29.58	1,983.1	6,799.4	89,431.0	426,852.2
Total vegetable food	2,391.9	150.4	41,132.4	14,157.7	355,034.4	1,712,087.7
Total, all foods	5,561.6	551.45	147,957.2	205,386.2	395,357.0	4,021,733.0
Total per person per day[1]	4.2	0.42	113.0	156.9	302.0	3,072.0
Total edible waste	588.5		17,548.4	23,291.5	52,545.6	
Total inedible waste	868.5					
Total food eaten	4,104.6		130,408.8	182,094.7	342,811.4	3,531,733.0
Total food eaten per person per day	3.1		99.6	139.1	261.8	2,698.0

[1] Calculated from the total number of meals served, 3927.

TABLE 2

Amount of waste

	INEDIBLE	EDIBLE	TOTAL
	pounds	*pounds*	*pounds*
First week	352.5	247.5	600
Second week	516.0	341.0	857
Total	868.5	588.5	1457

TABLE 3

Analysis of edible waste

	PROTEIN	CARBOHYDRATE	FAT
	per cent	*per cent*	*per cent*
First week	6.4	19.8	10.0
Second week	6.7	19.6	7.8
Average	6.55	19.7	8.9

The average amount of inedible material in all common American foods is given in O. E. S. Bulletin 28 of the Department of Agriculture, and the theoretical amount as calculated from these figures would be 10.1 per cent, instead of the 15.6 per cent of our study. Strict agreement with the theoretical could hardly be expected however, as the amount of water added in the refuse may sometimes be very considerable. In order to ascertain more definitely in the case of one food how our inedible waste corresponded with the rather generous margin allowed in the Bulletin we had the potato parings weighed separately during one week and the percentage waste calculated. The average was found to be 27.5 per cent. A similar study at Lake Erie College[2] showed an average waste of 36.1 per cent, while the figures given in the Bulletin for refuse from potatoes is 20 per cent.

Fuel Value. According to the most moderate estimates the nutritive requirements of an adult person lying asleep amount to 0.5 calories per pound of body weight per hour; sitting quietly, or with only slight movements, 0.6 calories per pound per hour; standing, 0.75 calories; walking at a moderate pace on level ground, 1 calorie; at moderate exercise, 1.25 calories; and at rather severe muscular work 1.75 calories. So we would calculate that a girl such as our average represents, who slept eight hours, sat studying, at lectures, and chatting eleven hours, walked or stood four hours, and exercised actively one hour, would require a little under 2000 calories per day. We would probably be safe in saying that their requirements vary from 1900 to 2200 calories per day according to age, size, and activity. The faculty would come within the same range, the servants a little higher, but so little that their small number would not appreciably affect the general average.[3]

The food consumption as shown by our results (see table) amounted to 2698 calories per person per day. A similar, or even larger excess over the theoretical requirements has been observed in many cases, notably in Gephart's study of St. Paul's School, Concord, where the food consumption of the boys was found to be equal to the calculated requirements of men engaged in the most severe muscular labor, such as lumbermen or stevedores.

The following table compares the Vassar results with those obtained in various other studies. It may safely be assumed that the require-

[2] O. E. S. Bul. No. 91, p. 30. U. S. Dept. of Agr.
[3] Rose, Feeding the Family. Pp. 47 ff.

ments of the students at the four women's colleges are about the same as those of our own students. For comparison we have included the averages of studies made of men students, of the families of professional men, and of the boys of St. Paul's School. It will be noted that our total calorific value falls fairly well within the average, but the proportion of fuel value obtained from protein food is high, and that from carbohydrate food correspondingly low.

TABLE 4

Fuel value of food consumed per person per day as determined by various nutrition investigations

	PROTEIN	FAT	CARBOHYDRATE	TOTAL	FUEL OBTAINED FROM PROTEIN
	calories	*calories*	*calories*	*calories*	*per cent*
Women students					
Vassar College	398	1252	1048	2698	14.8
Lake Erie College[4]	272	1037	1283	2592	10.5
Chicago University[5] (women's dormitories)	432	1322	1523	3277	13.2
North Dakota Agricultural College[6]	256	893	1440	2589	9.9
Wesleyan[7]	336	1152	1056	2544	13.2
Average of 16 men[8] students clubs	336	1058	1488	2882	11.7
Average of 14 families[9] of professional men	333	900	1354	2587	12.9
Average of boys of[10] St. Paul's School	617	1685	2075	4377	14.1

These results, with the exception of those obtained at St. Paul's School, do not take into consideration the amount of food eaten between meals or outside of the College dining hall, a factor which must be recognized if the results are to be used in drawing conclusions as to the dietary habits of the individuals under observation. It is almost impossible, however, to get data of even approximate accuracy on this point under ordinary conditions. At St. Paul's School the matter was simplified by the fact that practically the only source of supply was a tuck shop under school management, but the college girl has access to innumerable tea-houses, and tuck shops, and usually patronizes them all indiscriminately. In order to get a rough estimate of what this amounts

[4] Office of Expt. Sta., Bul. No. 91, U. S. Dept. of Agr., 1900.

[5] Univ. of Chicago publication, Food as a Factor in Student Life. Richards and Talbot, 1894.

[6] O. E. S. Bul. No. 91. U. S. Dept. of Agr., 1896.

[7] Connecticut Storrs Sta. Rpt., 1894.

[8] O. E. S. Bul., No. 91., p. 34. U. S. Dept. of Agr., 1893–97.

[9] Ibid.

[10] Rector's Rpt., St. Paul's School, Concord, 1916.

to we asked the Davison students to keep a daily record of all that they ate outside the dining room during the experimental period. Their lists make rather entertaining reading, but are difficult to standardize. We found that an average of 65 per cent supplement their college meals by more or less additional food, 10 per cent took their three meals in the dining-room and had nothing outside, while the remaining 25 per cent, a surprisingly large number, either missed a meal altogether or took it off campus.

As might be expected, there is the greatest difference between the habits of different individuals. They vary from the girl who ate one orange, but explained that she had had neither lunch nor dinner, to two young people who in one day consumed respectively in addition to their regular meals "one sandwich, four pieces of cake, a handful of popcorn, a one pound box of popcorn, two handfuls of salted nuts, two pieces of candy," and "three large pieces of candy, sixteen small pieces of candy, ten cakes, one cup of chocolate with whipped cream." The last item, we are told, was taken simply for the sake of being sociable. A young lady who had played basket-ball for an hour and walked for an hour found it necessary to sustain life in between whiles with "Half a grape-fruit, quarter of a pound of chocolate marshmallows, five hard candies (eaten from politeness), one box of Smith's cough-drops, one package of licorice life-savers, a tuna-fish sandwich, two pieces of fudge, and a piece of chocolate cake (for politeness)." One girl reported "Fifteen pieces of chocolate candy, one apple, one piece of white cake, and two marshmallow pecan cakes, eaten because Lent begins tonight" but the next day she had "one hot dog, four marshmallow pecan cakes, and half a devil sandwich," so she did not suffer greatly from her Lenten abstemiousness. Habit seems to account for more than any general nutritive requirement, as some few girls were found who habitually ate little or nothing between meals, although living as active a life and apparently as healthy as their neighbors who habitually ate much. Of course both classes were given to spasmodic orgies.

Their supplementary food was usually sugar in some form, candies, cakes, or ice-cream. It is a question whether this is due simply to the taste for sweets which is instinctive in all young people or is in response to a physiological need. We have already noted that the amount of carbohydrate food supplied to our girls is rather low. A few girls reported that they "feel hungry for candy after meals, especially after lunch." Another reports having added jam to the regular college din-

ner on one occasion. On the other hand one ate a half-pound of candy "because it was lying round and had to be eaten!" This seems to be a not infrequent reason for eating food of various kinds. Many ate "for sociability," many because they were hungry, a few because they disliked certain of the college meals, such as the fish luncheon on Fridays.

It is impossible to give even a rough estimate of the average fuel value of this supplementary food on account of the great variation. That it is not inconsiderable will be evident when we note that one piece of fudge of the usual size gives 100 calories, one sundae some 300 calories or more, and one piece of cake from 200 to 300 calories. The girls above referred to must have averaged well over 1500 calories apiece in addition to that which they obtained at their regular meals, but only one of them reported any exercise on that day beyond walking to classes.

Cost. The cost per meal of food alone was found to average $0.14, the cost of food, preparation, and service, $0.184. These figures cannot fairly be compared with those obtained in the majority of other cases on account of the great increase in the cost of living since 1914.

Practically all of the milk and vegetables used at the college are produced on the college farm. These are purchased from the farm by the housekeeping department and paid for at current wholesale rates.

TABLE 5

Comparison of relative expenditure for different foods at Vassar College and at other Institutions[11]

	VASSAR COLLEGE	LAKE ERIE COLLEGE	UNIVERSITY OF CHICAGO	NORTH DAKOTA AGRICULTURAL COLLEGE	AVERAGE OF 3 WOMEN'S CLUBS	AVERAGE OF 10 MEN'S CLUBS
	per cent	*per cent*	*per cent*	*per cent*	*per cent*	*per cent*
Cereals	7.1	7.4	12.0	8.7	9.3	11.5
Dairy products:						
Eggs	6.3	2.5	3.0	6.1	3.9	4.8
Butter	9.1	17.8	12.8	14.5	15.0	11.8
Cheese	0.3	0.9	0.3	0.3	0.5	0.4
Milk	7.4	8.4	21.1	7.1	9.2	11.3
Cream	4.7	0.6	4.7		1.8	0.2
Total	27.8	30.2	32.9	28.0	30.4	28.5
Fish	3.6	1.8	2.5		1.4	4.0
Meat	41.3	32.0	30.3	35.1	32.5	29.9
Vegetables	9.8	7.8	7.1	5.2	6.7	10.0
Fruit	5.0	14.9	9.4	10.2	11.5	7.6
Miscellaneous	5.4	5.9	5.8	12.8	8.2	8.5

[11] Loc. cit.

TABLE 6

Percentage expenditure for nutrients, mineral matter, and waste in the staple foods used during the study

	NUTRIENTS	REFUSE	MINERAL MATTER AND WATER
	per cent	*per cent*	*per cent*
Sugar	100.0		
Cereals	75.0		25.0
Dairy products	41.0	2.0	57.0
Fish	14.0	27.0	59.0
Meat	36.0	19.0	46.0
Vegetables	14.0	14.0	72.0
Fruit	18.2	28.7	53.1

The relative amounts spent for certain staples are shown in table 5.

From the data in table 6 it is possible to compare the relative economy of the various articles of food. In making this calculation we have used the figures for percentage composition given in Bulletin 28.

"Fruit" in the above table refers to the common winter fruits, apples, oranges, lemons, grape-fruit, bananas, prunes, and raisins. It does not include canned fruits, jams, jellies, etc., which would give a higher value for nutrients on account of the added sugar present.

It is to be remembered that this table does not distinguish between fat, protein, and carbohydrate as source of nutriment, that it practically omits consideration of the food value of mineral matter, and that in order to insure a properly balanced diet it is often necessary to use the higher priced foods instead of those which might appear more economical.

Summary

Total number of meals	3,927
Total weight of food used	5,561.6 pounds
Total fuel value of food consumed	3,531,733.1 calories
Total fuel value of food per meal	899. calories
Total fuel value per person per day	2,698. calories
Total fuel value per person per day from protein	398. calories
Total fuel value per person per day from carbohydrate	1,048. calories
Total fuel value per person per day from fat	1,252. calories
Per cent of total fuel value obtained from protein	14.7 per cent
Total inedible waste	868.5 pounds
Total edible waste	588.5 pounds
Total waste	1,457.0 pounds
Total waste per meal	0.36 pounds
Total protein in edible waste	38.4 pounds
Total fat in edible waste	51.1 pounds
Total carbohydrate in edible waste	115.2 pounds
Total cost of food	551.45
Cost of preparation and service	174.16
Cost per meal of food alone	0.14
Cost per meal of food, preparation, and service	0.184

THE WORK OF THE DIETITIAN IN THE CANADIAN MILITARY HOSPITALS

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General Organizing Dietitian, Military Hospitals Commission

I have been asked to explain the work of a dietitian in the Canadian Military Hospitals, and to allow the directions I have placed in the hands of each dietitian to be published. It is with much pleasure that I comply, hoping that in some way I may be of service in assisting the American dietitians to prepare for the day when they will have to face our problem in caring for their returned wounded soldiers.

The Military Hospitals Commission has at the present time over fifty military hospitals and convalescent homes, and several others under construction. These vary in size all the way from the small tuberculosis sanitorium of 50 to 75 beds to the large convalescent hospital of 1500 to 1600 beds. Possibly the most interesting point in all Canada for a dietitian is the big Discharge Depot at Quebec, where sometimes 2000 men are fed three times a day. A dietitian, with one assistant and two pupil dietitians, is in charge of all the food served to this large number. In 1918 there will be accommodations for between 18,000 and 20,000 convalescent soldiers.

At the present time dietitians are in twenty-one of the larger hospitals in complete control of the dietary department, and are being installed in the other hospitals as fast as competent dietitians can be secured and taught the cost accounting system in use in the Military Hospitals.

A dietitian can perform a work of inestimable value in planning attractive and well-balanced menus and in seeing that the preparation is such as it should be and the service good. Also by using a modern, up-to-date cost accounting system she can tell at the end of a week the average cost of a meal. Few institutions can afford to ignore costs; therefore, the dietitian largely controls the cost by selection of her menu.

Today there is a crying need for competent, executive dietitians wherever a large number of people are being fed. The name "dietitian" is associated in many minds with the work of teaching nurses and supervising their work in a special diet kitchen where the special diets and meals for private patients are prepared. This is the work of many dietitians and is of the greatest importance, but the modern,

executive dietitian has travelled far from this limited field of operation. Today she is in control and responsible for the food served to everyone in the institution, whether patients on special or regular diets, nurses, doctors, or employees.

Why should the food to the regular patient not receive the most careful attention? Often the variety has to be more or less limited on account of the cost; therefore all the greater need for a dietitian who will insist and demand that each article on the menu should be both prepared and served as attractively as possible. A menu that is faultless may be written by many, but the product may be "hopeless," because there are two places where it may be completely ruined, either in the cooking or in the serving. This is where the dietitian comes to the rescue. She can give detailed instructions (and what is more, see that they are carried out) to her cooks regarding method, temperature, and time of cooking, and she can so route the serving that the food is served hot or cold as the case may be.

Service is the great problem in the modern hotel. It is just as great a problem in a hospital, and all the motion study and efficiency management information available is needed to assist the executive dietitian to route her work in such a way that the everyday meal being prepared for great numbers is served attractively and well.

Conditions in military convalescent hospitals are quite different from those in a regular civilian hospital. Possibly 80 or 90 per cent of the men are up and walking around, only being kept there for treatment, rest, and diet. Each convalescent home has a large dining room and usually the cafeteria service is used for all except cripples and amputation cases. In the regular orthopaedic hospital, waiters are employed in the dining room, but in all others the cafeteria is being used. It saves labor and is more efficient and eliminates the possibility of cold food.

A copy of the following directions regarding the duties and suggestions concerning ideals, spirit, and the importance of details is placed in the hands of each dietitian.

Outline of the Duties of a Dietitian in Military Hospitals or Convalescent Homes

1. A dietitian's position is that of a superintendent of her own department. She plans the menus, requisitions the supplies, plans the work for all employees, and is in control of that department, and every person employed in it.

2. She is responsible for the work of all cooks, waiters, and other helpers employed in the dietary department. She must assign their work to them, supervise its execution, criticize the condition of their work-rooms, their uniform, their personal appearance, and conduct while on duty, arrange off duty time for each, and instruct them when needful.

3. She should inspect daily the condition of the dining rooms, kitchens, refrigerators, and equipment in her department (or, if unable to do this herself, have it done by her pupil dietitian). Only by the most careful inspection twice a day at least, can the dining rooms be kept up to the mark.

4. The dietitian will set the standard for cooks and waiters, and other employees, taste every single thing prepared for the main dining room, and see that the seasoning is correct, and the product satisfactory in every respect. She holds everybody in the dietary department up to the mark.

5. During the meals the dietitian or her pupil should supervise the serving, see whether the food goes out in the proper quantity, see that it is hot and served attractively, also that servers are working rapidly and in the most efficient manner.

6. The dietitian plans the work for all employees; this plan varies from day to day, according to the menu, number of employees not on duty, and the weather. (Cleaning program is chiefly affected by the weather.)

7. The dietitian or her pupil supervises the work of a special diet kitchen, where the bed patients' trays are prepared. General articles of diet come from the main kitchen, and are kept warm, but eggs and certain special articles are prepared in the special diet kitchen, depending upon conditions.

A Few Suggestions for Dietitians

1. A dietitian's ideals and spirit should influence her whole department. It will soon be realized that she is striving to serve only food that is nourishing, easily digested, properly prepared, palatable, attractive, and well served, such as should be given to patients whose chief chance of recovery may be in proper diet. Everyone in her department must realize the importance of his or her work in assisting to carry out this ideal. The welfare and recovery of the patients is the goal to be kept constantly before them.

2. A dietitian should not only be able to manage the help, but it is quite as essential that she be capable of working harmoniously with the other officers of the institution, oblige whenever it is possible, and make everbody feel that she is the friend of the hospital, and doing everything in her power for the benefit of the institution. Confidence in the dietitian personally may mean everything to her success. She should master hospital etiquette and be strictly professional. The longer one lives in a hospital the more one will appreciate its significance.

3. In dealing with the help try to inspire respect for their work because it is one of the most needed elements in their life, e.g., many waiters actually suffer through lack of respect and appreciation for their occupation on the part of the public, and it stimulates and encourages them to discover that one appreciates the fact that it requires an exceptional degree of observation, memory, power to systematize, and speed, in order to be a good waiter. Understand your help and their difficulties. Give each employee his due respect and consideration and you will generally receive the same; in brief, apply the "Golden Rule." In planning their work do all your thinking beforehand, and never ask the wrong person to do a piece of work. An employee is often very sensitive about his dignity, and will walk out sooner than do a duty usually performed by a man a little lower down in the scale. If you discover a malicious trouble maker, remove him at once. One such may undermine your whole discipline.

4. Be equal to emergencies when every plan is upset without a moment's notice. A patient or guest cannot understand the cause if dinner is poor or unsatisfactory. He does not know that possibly the delivery failed to arrive, or the shipment was returned as unsatisfactory, or that the chef is ill.

5. A dietitian should train her pupil dietitian in every branch of administrative work in her department, so that she can plan the work efficiently, keeping in mind the variations in the menu, and number of employees available. The pupil should supervise the serving of food, issuing of supplies by storekeeper, and other activities, and learn to know what every employee should be doing each hour of that particular day, so that she may intelligently manage that department. She should also gain experience in buying or requisitioning in large amounts.

6. Use good business methods in planning menus. Always consider food values, but also popularity, cost, equipment, and labor available. Try to wisely combine all these as far as possible.

7. Use discretion and common sense in making your menus, and buying or requisitioning. There is as much danger in misdirected economy as in extravagance. True economy will strive for the best results, with absolutely no waste. Poor economy will economize on possibly one point, forgetting half a dozen others, e.g., in preparing creamed rice, you may save 5 cents per pound by buying a cheap rice, but it requires to prepare it the same amount of overhead charges, expensive service, milk, and eggs. Result of the poor rice—an inferior, unsatisfactory dessert, and waste. By using a good quality, the cost is increased possibly a fraction of a cent per order, but the result is entirely satisfactory and there is no waste. This illustration will hold good in many other instances that could be mentioned. A satisfactory diet will not be the cheapest, but it is the only thing that will meet the requirements of both patients and the public, and the ideals of the

Military Hospitals Commission. Finally study efficient methods and keep abreast of the times.

It is suggested that all dietitians should read "Shop Management" by F. W. Taylor, and "The Twelve Principles of Efficiency" by Harrington Emerson, as they contain many helpful suggestions. The successful dietitian must be enthusiastic and put her work above every other consideration.

Dietitians must never lose the sense of proportion. Put first things first, and certainly the most important thing by far is to see that the food is prepared in the proper way, with a maximum of attractiveness for the money expended. Have each single article on the menu as perfect as possible, both in preparation, seasoning, and appearance. This is the chief work of a dietition. Criticize your chef. Your menus must be prepared according to *your* ideals not according to his, unless you heartily approve of his methods. You must set the pace for him. Issue your instructions through him to kitchen help, if you prefer, but insist that he has them carried out.

The attractive preparation of food is nothing short of a real social service. With the very sick it is often their only pleasure—they look forward to their three meals a day, whether their three meals are only liquids or a more elaborate menu, but what a sad disappointment, if on liquids, if the lemonade is not properly flavored, or lukewarm—or the soup is poorly seasoned. The well need just as careful consideration (aside altogether from the fact that scientists have found the secretion of gastric juice to be directly influenced by the palatability of food) because the three meals, particularly in a hospital, are the most important event in the day's program and no single individual in the whole institution can render as important a service as a wide awake dietitian who sees that those three meals go out as perfect in every detail as possible.

A dietitian's success depends almost entirely upon her appreciation of the great importance of the details. The details in a dietitian's work are the big things and no dietitian will be a true success until she fully realizes this.

Is your gravy an attractive brown color? Is it properly seasoned? Does your chef use the flavoring in his meat pans to the best advantage?

Are your soups varied? Is each one *always* tasted and criticized and approved by the dietitian before being served?

Are your vegetables seasoned and as attractive as possible?

Potatoes particularly should be carefully watched. Are they mashed well and beaten until like whipped cream—never soggy or heavy or yellow?

Is the porridge of the right consistency and properly salted?

If serving a fruit salad are all the ingredients in almost uniform sizes? Are the sections of orange diced and the whole as attractive as for the most expensive private ward? There is often no difference in cost except a little in supervision and labor. Vary your fruit salads according to the season of

the year. Occasionally a small dice of raspberry jelly or, in cherry season, raw cherries look attractive and are well worth while in increased variety.

All custards, blanc manges, bread puddings, cottage puddings, jellies, and baked rice can be prepared in the oblong baking dishes and cut into 24, 28, or 32 pieces according to the size of dish and thickness of the dessert. If serving a large number the greatest speed is attained if desserts are all cut first, then one man lifts each section with a slice and pushes off with a knife, while an assistant removes the dessert saucers as fast as he can serve. Speed and accuracy can be obtained and the servings are uniform and attractive. If a sauce is used a third party can serve it. Particularly in a large institution where a great number have to be served, system and motion study are necessary to save labor and get the best results.

Under no circumstances allow the bookkeeping and accounting end of your work to become the big end. The planning of menus, supervision, and regular tasting of everything is of vastly more importance, and the dietitian must never lose sight of this. Bookkeeping is done in between meals because a dietitian cannot remain in the kitchen constantly and she does not need to do so. Accounts are principally for the information of the dietitian. She can list the cost per serving of each article she serves and more intelligently plan her menus. Often the food values and the attractiveness are about equal between two dishes, but one considerably less expensive. A saving of one cent per meal through more efficient selection with a population of 250 people means $7.50 a day or $2737.50 saved in a year, and possibly quite as attractive and nourishing dishes, but selected so as to take full advantage of the season of the year and market conditions.

A large part of the routine of the bookkeeping should be done by the pupil dietitian, because in some institutions (depending upon the chef) the dietitian in charge will have to give most of her directions personally. The pupil must be accurate, otherwise she will not be fit to assume control of such an important enterprise later. The chief dietitian analyses these cost reports, possibly assists on them, but must not be lost in the detail, or neglect her more important duties. The dietitian plans the menus and will usually make out the requisition, but the pricing and deduction from stock cards and entry on spread sheets can largely be done by the pupil dietitian leaving the dietitian in charge more time to analyse results and study prices and think out improvements to increase efficiency in her department.

If possible interest some of the local societies or school children in your department so that your dining room can be constantly supplied with either cut flowers, flowering plants, or ferns. The bare appearance is removed from the dining room and quite a different atmosphere created by flowers.

THE PROJECT IN HOME ECONOMICS TEACHING[1]

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DEFINITION OF THE PROJECT

An examination of the pedagogical literature of home economics, as well as of agriculture, mathematics, and the physical, biological, or social sciences reveals, on the one hand, an almost complete lack of unanimity upon the meaning of the term project, and, on the other hand, a rapidly growing use of the term in the discussion of both the curriculum and methods of teaching.

It is, perhaps, too much to expect that the term has been used for a length of time sufficiently extended to permit of a definition which will be generally accepted; but it is imperative that each writer define as clearly as he can what he believes to be the denotations and connotations of the term.

In this paper the project is considered to be an act carried to completion in its natural setting and involving the solution of a relatively complex problem.

Four terms of the definition should receive a few words of explanation.

First, the project is a problem. This differentiates it from reflex and habitual acts such as digestion and respiration which are normally carried on without the intervention of consciousness, or from knitting or dishwashing when they have become habitual. Any of these may become problems, as the control of respiration to the singer, or knitting to a novice. They are problems when they require thought but when they are reflexive or habitual they are no longer problems.

Second, the project is a relatively complex problem. Problems have many degrees of complexity. The holding of a paring knife, the placing of a glass on a shelf, or the closing of an oven door, are problems whenever they involve any modicum of thinking. On the other hand, such complicated actions as the preparation of a roast or the canning of fruit are equally problems when they involve any degree of thinking.

It so happens that in the laboratory a complex problem may be so presented to a class as to make it appear to them to be a number of

[1] Presented at the meeting of the American Home Economics Association, Kansas City, February, 1917.

isolated problems rather than as one complex problem consisting of a series of subordinate ones. For instance, a teacher who expects the class to can fruit may pursue two plans. She may set before them the complex problem of fruit canning and start them to work upon its solution step by step and in the treatment of each of the steps may disclose its bearing upon the final outcome. This can be done by raising the problem, "How is the canning of fruit carried on?" The students may then analyze the process and discover that it involves, for instance, sterilization and the use of air-tight receptacles. Sterilization may be in turn taken as a problem and analyzed into such elements as temperature, and the life habits of mold. In this process of analysis the teacher starts from the outcome, canning, and works through the subordinate problems one by one and in each case makes clear to the class the bearing of each upon the final outcome.

Or, on the other hand, the teacher may teach the use of the thermometer, the life history of molds, the degree of temperature necessary to kill molds, and the construction of air-tight receptacles without making the students conscious of their bearing upon canning; and later the canning may be taken up as an application of all the individual factors which have been studied as isolated problems

It is thus possible for a portion of subject matter which appears as a complex problem to the teacher to be a series of isolated small problems to the students. But the term project, as will be seen more clearly before the end of our discussion, applies to the complex rather than the simple problem although we are able to divide a large project into a number of subordinate ones.

Third, The project contemplates the solution of a complex problem as one step toward carrying over of the fruits of the solution into some form of action. For instance, it is possible to introduce the class to the complex problem of fruit-canning, to view it as a complex of subordinate problems rather than an agglomeration of isolated problems, to teach the steps in the process and the reasons for each, and stop at that point without completing the act of canning. This is the theory of canning without the practice. It constitutes the solution of a complex problem but is not a project because by the definition of the term performance of the act is necessary.

While the canning of fruit which we have used as an illustration is usually carried over into practice in the laboratory, there are many facts of home economics which frequently are left in the field of theory.

For instance, because of the difficulty which many schools have in obtaining the equipment necessary to carry into practice theories of sanitation or inside decoration, it is probably safe to say that in almost all high schools these problems are not carried through to performance. The students study how to furnish rooms but do not furnish them.

It is possible, as has been said, to present the problems of these and other portions of subject matter as complex problems with subordinate problems connected in a trend of thought leading to a final solution. Such problems of a complex sort may be called "multiproblems." They are distinguished from simple problems by their relative complexity and from the project because they are not carried over into action in a natural setting.

Fourth, in order that the multiproblem which is carried over into action may become a project it is necessary that the action be completed in its natural setting. The term, natural setting, is full of difficulties of definition when carried into the interior of any body of subject matter, but for our purposes it is relatively simple, as an illustration will make clear. The multiproblem of canning may be carried into the field of practice by the canning of a small amount of fruit in small utensils, and the student may learn the practice of canning or perhaps it is better to say obtains a simple illustration of the practice. But this is not the natural setting of the action. The amount of the fruit is unusual. If the student were canning at home she would have to can a peck or a bushel and would have to use several jars. The process is also unnaturally simple. If she were canning a bushel of fruit she would probably have to simultaneously watch a fire, get many jars ready, find proper places to set them or attend to one portion while another is cooking. In addition to this merely technical process she would have somewhat in mind before the canning began the social problems of preparing food for winter, of pleasing her mother or her father or her prospective guests, of demonstrating that she is a good housekeeper, or of earning some money for student activities in the high school.

The project idea as I have defined it contemplates the performance of an act in as nearly its natural setting as possible. The project seems to be an attempt to return to the concrete conditions of home education from the abstract isolation of the school. It presupposes natural activities flowing in spontaneous currents. Problems arise; they are analyzed and solved and are made to perform their intrinsic functions in actual situations.

THE PROJECT AND THE CURRICULUM

There are at least three bases for the construction of a home economics curriculum—principles, processes, and projects (or multiproblems). If the latter is selected as the basis, either in the form of multiproblems or projects, an unsystematic hold upon the subject matter results. Only what is needed for the project is used and it is used only in the order needed. It is conceivable that with a change in projects the parts of the subject matter studied might be appreciably different.

If the project is to be made the basis of the curriculum it is necessary for the teacher to decide as scientifically as possible what principles and processes should be mastered by the student and then to select not single projects but groups of projects so arranged that election of projects is made possible with the certainty that all essential facts, processes, and principles will be covered. Then when the principles and processes have been covered by the project method in class, enough time should be left in the course so that the subject matter may be systematized. First, the project is used for the approach to all parts of the subject, and then a systematizing study of the field follows as an extended summary.

ADVANTAGES AND LIMITATIONS

It is claimed that the project method has three outstanding advantages and one important limitation.

The advantages are described as follows:

First, the natural setting provides a strong motive—canning fruit for the family is more interesting, we will say, than cooking a little fruit in a small laboratory utensil. Treating the mold on fruit "I have canned for winter use" is more stimulating than studying molds as ends in themselves. Studying sterilization to use immediately in putting up fruit for friends has much more appeal than merely studying sterilization as a class exercise. Tying the process to outcomes and beginnings of a varied and intensely fundamental sort tends to produce a great spontaneous interest. All projects are not interesting to any one student, but if a project is selected so as to be of interest, the degree of the interest is likely to be very high because of the setting in the experience of the student. It is claimed that when the project is interesting, it is very interesting.

A second advantage claimed is that the natural setting and the great multiproblem with its coherent subordinate problems make the intellect

function in a fuller tide of activity. The strong initial motive and the constant side lights from practical conditions and immediate practical outcomes make the student think with a higher degree of effectiveness.

The acquisition of skill in carrying out processes in actual practice is a third advantage claimed. After the student has learned fruit canning or bread making or hat designing in school as a project she is able to can fruit, make bread, and design hats at home. She does not know mere theory; she has learned the method of performance. The advocates of the project method assert that after the theory is learned there is a wide zone of danger in carrying out the solution, a zone full of difficulties which may ruin the effectiveness of the performance. They point to the fact that some students of home economics whose mastery of the theories is conceded by the most critical, are very inefficient homemakers. These advocates explain this by saying that the performance of the act itself involves a very important technique which needs as careful attention as does the solution of theoretical problems or multiproblems. Nor can it be any more safely left to chance, they say, in the expectation that the student will pick it up for herself at some future time than can the learning of the theory. It is essential to a successful hold upon the subject.

The advocates of the project claim further that the performance of the act involves not only the theory and practice of the technique of performance but also the very essential desire to perform the act under home conditions. They claim that a student may solve multiproblems of house sanitation with marked ability and still have no desire to make her own home sanitary or, at least, no desire strong enough to stimulate her persistently until the home is made sanitary. This making of the desire concretely effective, which is included within the project method has, they say, a technique for its mastery as difficult to learn and as necessary to be taught as the solution of the multiproblem or the performance of the act.

The chief limitation of the project method is its failure to provide a systematic organization of the facts and principles of the field of study. Facts and principles are acquired only as they are needed in the performance of the project and in the order in which they are used in each particular project. It is, therefore, conceivable and likely, indeed, in actual operation, unless care is taken, that some important facts and principles will be omitted, and those studied will not be seen in their logical relations except possibly by a few of the more gifted.

To send a student forth into the practical situations of life without a systematic organization of a subject, if he is of sufficient maturity to grasp it and if the time at the disposal of the teacher is sufficient to provide for it, is unfortunate. Therefore, it is necessary if this limitation is to be overcome, that the project study of any group of facts should, under proper conditions of maturity and adjustable time limits, be supplemented by a systematic review of the field. This holds equally true of the multiproblem attack.

In brief, the project method presents the machinery for unusually strong interest, for a fuller tide of intellectual activity, and for the development of the technique of practical performance and desirable attitudes; but it needs to be supplemented under the proper conditions by a systematic organization of the facts and principles included within the field. That it is universally applicable is neither certain nor likely; but that it should be experimentally used for the purpose of determining where it will work efficiently, is highly desirable.

EAT VEGETABLES AND SAVE BREAD

There are large supplies in Canada of potatoes, carrots, and onions in excess of the amounts normally consumed by the people of this country. These vegetables are all wholesome food and it is a small but necessary war service for the people of the Dominion to increase their consumption of these commodities and to eat less bread, meat, and other foods which are so greatly needed overseas. Unless Canadians will use more freely the vegetables of which we have a surplus supply, large stocks will be wasted—and, at a time when there is such need of food in Europe, waste would be nothing short of criminal. Eat more of the vegetables in order to save exportable food for the soldiers and the civilian populations who already know the meaning of food shortage.—*Canadian Food Bulletin, Ottawa, January 26, 1918.*

CONSERVATION AND CLUB WORK

LUCILE WHEELER

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In club work with the boys and girls of the land, there is a greater opportunity for laying the real foundation for genuine and thorough conservation than in any other field of endeavor. As the twig is bent, the tree inclines, and as the first ideas of saving, not from the initiative of hoarding or stinginess, but for the purpose of thrift and from humanitarian instinct are instilled in the minds and hearts of boys and girls, there will develop results which cannot be obtained otherwise. With them, there are encountered no idiosyncrasies due to years of experience, no ruts have been worn, but they are ready to learn. To them fat can be mixed with flour for piecrust with a knife or with a fork equally well for they cannot say, "Oh, I've always done it this way." Even the young wife knows too well the effect of mother's biscuits. In vain she tries to make ones "like mother used to make" to cater to the masculine palate. All are creatures of habit. All have standards due to past experience. Therefore, in club work with young people, nothing hampers the possibilities. Starting then with inexperience but with youthful enthusiasm and the devotion to a cause, it is easy to develop the future workers.

The opportunities in club work at this particular time all focus on conservation. Conservation of food, of clothing, and of coal. Posters everywhere say use less fat, less wheat, less sugar; save the wool for the aged, the babies, the soldiers; save coal by keeping the house cooler, burning less gas and less electricity. Minds become calloused to inanimate entreaties. They are no more conscious of them than noises in the street which day after day make no impression. It is necessary to keep prodding, and dress up the appeal in new words. The necessity for conserving staples calls for substitutes. The ease of finding substitutes is not equaled by ease in using them. Originality on the part of the teacher or leader, plus the enthusiasm or magnetism which makes the youth desire to follow in his wake are the factors which will bring success.

Two obstacles have been hard to overcome. The substitute should be desirable, and, to make popular appeal, it should be cheaper than that for which it is substituted. Corn, for instance, is found less palatable to the majority than wheat, and harder to use. In many cases,

it has cost more than wheat. A way must be found to use corn, and since the purpose here is to save wheat and not a quarter of a cent, the money factor must be discounted. In using butter substitutes, there is a saving of money. Oleo at 35 cents a pound and butter at 57 cents would easily allow one to pay a fraction more for corn meal than for wheat flour. When the food administration has continued a little longer the work so admirably begun, the regulation of prices will tend to remove the objection that the substitute is more expensive than the original foodstuff. It is only natural to have objections arise when fish is more expensive than beef and furnishes less energy material for the money.

Conservation and thrift go hand in hand. Thrift makes conservation possible and efficient. The saving of materials and the saving of money have a delicate adjustment. The emphasis on the last may weaken the cause of conservation. Thrift manifests itself in three ways—saving materials, saving money, saving labor. The foodstuffs satisfactory for transportation and absolutely essential for the maintenance of the army abroad and the civilians of foreign countries must be saved. Figures recently compiled show that the world's wheat crop for the last year is 14 per cent, that is, 1,868,000 bushels below the five year average. Corn has increased in amount equal to the deficiency in wheat. Oats have gained 14 per cent, rice, 16 per cent, potatoes, 12 per cent. The conclusion is obvious that we must use corn, oats, rice, and potatoes and less wheat.

The saving of money through the elimination of non-essentials is thrift. It means that such money can be diverted from former channels to the purchase of Liberty Bonds and Thrift Stamps. Ceasing to buy fabrics, home furnishings, clothing, toys, candies, which can be dispensed with, releases labor for activities directly contributory to war efficiency. Everyone who can do something which previously was done by a paid worker can feel he is filling a vacancy made by someone called to serve. The transition of the released worker to the new employment may not be directly observable, but it does occur. In this way, children are to help out. Their energy can be harnessed and much done by them to carry the additional tasks laid upon the home.

Boys and Girls Club work takes away the stigma of child labor. It is pleasure and fruitful activity coupled. It accomplishes two things. It makes the child an asset by training him, and through the child it reaches the parents and stimulates them to use and conserve. A girl can

be taught to make a new bread and the mother's pride in her accomplishment means a war bread used which would not have been used before.

There are two things which ought to be worked for to make conservation efficient. Definite patriotic standards is the first. Bread charts and bread scores have been established which for years have stressed the fine points of a perfect loaf. No longer is the same loaf attainable. The new milling rule requiring a 74 per cent yield instead of a 60 per cent has changed the breadstuff. Elasticity of the protein constituents determines size and lightness of loaf. Fine milling affects the starch content and determines whiteness of the loaf. These factors are losing their place. Palatability and flavor are less affected. Could not new scoring factors be introduced, giving a valuation to percentage of mixed flours used and taking into account the increase in mineral nutrients furnished by a use of the whole grain?

Second, eliminate the white loaf. So long as there is on Tuesday the old perfect loaf, just so long will there be discontent on Wednesday. Comparisons are always odious. Make the path easy for the war bread if it has to be made easy. Besides the slogan, "a wheatless day," adopt the slogan "no day an all-wheat day" or "no bread an all wheat bread."

There are many objections to such a suggestion, but they are foundationless. Some say they do not like these war breads. But from several places the report has come that never before have such good breads been served as this winter when mixed flours were used. This shows that with care and effort a good product results. Others say that they cannot eat cornmeal, they dislike buckwheat, and rye is disagreeable. Digestive disturbances are not due to these wheat substitutes. They are all satisfactory in food values, and can be safely used. It has been shown possible, by feeding experiments with animals and human beings, to exist on these grains as part of the diet in a much greater proportion than they would be used in the home. There are advantages in using them, for the wheat substitutes are less highly milled and furnish more mineral and fat than does white flour. The use of mixed flours gives greater variety in breadstuffs and means additions to the home table to be welcomed and not merely tolerated.

PATRIOTISM AND FOOD

From The Food Problem[1]

Patriotism and food! Winning a world war by eating corn and chicken instead of wheat and beef! It will take much education to get this point of view. An army of food-savers does not appeal to the imagination at first consideration. But remember the large words of M. Bloch: "That is the future of war—not fighting but famine."

Germany is fighting not only with armies of men in field-gray but with greater armies of un-uniformed men, women and children; the civilian armies of workers and food-savers. Germany is fighting as a whole people, a whole nation mobilized. Germany is fighting to win a war that was to have been all conquest and glory, and is now all Durchhalten. In this fighting and Durchhalten Germany has lifted food to all the importance that M. Bloch prophesied for it. She is struggling to hold off famine from herself and to assure famine for her enemies. Germany controls food, saves food, stretches food, as no nation ever did before. That she has not already been beaten is due no less to her food organization than to her fighting organization. She has put patriotism and food together. So must we.

It is a time of rare and glorious opportunity; a time in which prosaic business and industry may be lifted up to the high plane of national service. And it is being so conceived in many quarters. The editor of a millers' journal puts it well for his miller and baker readers when he says: "He who grinds a barrel of flour or makes a loaf of bread to the glory and the good of the nation, forgetful of self, performs his duty in a spirit of devotion equal in its way to that of him who goes forth to actual battle."

And just as business and industry can perform their national service by putting patriotism and food together, so can we who serve our households and public dining-rooms; and so also can we who eat—in a word, all of us. There is no magic way to making food win the war. It can be done but in one way, the way of voluntary and eager resolution and action of the whole people, each group and each person according to the measure of his opportunity and means; a matter of daily personal service on every farm, in all the places through which pass the great food masses, and, finally, in every little shop and every kitchen and at every table in the land.

[1] For a review of this book see page 139.

It is not a sordid association, patriotism and food. It can be as fine as the spirit of democracy and as ennobling as the struggle for democracy. For it is, in truth, in these days an essential part of each. If we cannot organize our effort in this world crisis by the individual initiative, spirit and consent of the people, then democracy is a faith on which we cannot stand. For autocracy has shown that it can organize its effort; it does it by imposing organization by force, from the top. We must do it from the bottom, and voluntarily. The administration of food is a test of what our form of government is worth. If success in it did no more than insure its immediate aim, providing our Allies with food, it would be wholly worth while. But it will do more than that; it will prove our faith in ourselves.

THERE IS NOTHING NEW UNDER THE SUN

Mixed breads and weighed rations have the authority of a long ancient past. Nearly 600 years before Christ, Ezekiel gave the people of Israel this message:

Take thou also unto thee wheat, and barley, and beans, and lentiles, and millet, and fitches (spelt), and put them in one vessel, and make thee bread thereof . . . . three hundred and ninety days shalt thou eat thereof.

And thy meat which thou shalt eat shall be by weight, twenty shekels a day: from time to time shalt thou eat it.

Thou shalt drink also water by measure, the sixth part of an hin: from time to time shalt thou drink.

Moreover he said unto me, Son of man, behold, I will break the staff of bread in Jerusalem; and they shall eat bread by weight, and with care; and they shall drink water by measure, and with astonishment.

—Ezekiel 4: 9–11,16.

FOR THE HOMEMAKER

WHAT WE SHALL WEAR THIS YEAR AND NEXT

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What we shall wear in the months to come is always an interesting matter for speculation, but this year, when there is such a general textile upheaval caused by the World War, the subject becomes not only interesting but a matter of serious import.

Few persons realize the very small amount of textile fibres which can be purchased by our clothing manufacturers or the causes which have brought about such conditions.

Those of you who have done much Red Cross knitting know how difficult it is becoming to procure yarn for that purpose. This is because there is so little raw wool on the market, and so much of that is being commandeered by the government for soldiers' uniforms and blankets that there is very little left for other use. For some time there has been a marked decrease in the amount of wool grown in this country. There are now 15,000,000 less sheep in the United States than there were in 1903. This decrease is due to the rise in land rental and to the higher wages which must be paid to the sheep herders. The government in time past allowed sheep to graze on the big ranges without charge, but now the large tracts of land are being broken up into smaller holdings and fences are required which are expensive and require much labor to keep in repair. This has discouraged the sheep growers. They have gradually gone out of business and have taken up a less troublesome means of livelihood. A More-Sheep-More-Wool Association has been formed recently which met in Philadelphia on the eighth of November to discuss the problem and to devise measures to relieve the situation.

Before the war the United States grew only two-thirds of the wool used in our mills, and the remaining third came from abroad. Now none is imported except from South America, for the Allies have use for all they can get. Besides that used for uniforms and blankets, millions of yards of worsted cloth, costing $3 a yard and known as shalloon and

shell cloth, are being used in bagging or covering both the propelling and explosive charges for the big guns. Every bit of wool used in this way is entirely destroyed.

Even if there were an abundant supply of raw wool, however, the supply of yarn would certainly be limited because of the scarcity of labor. The draft has taken spinners from the mills in great numbers and new workers must be trained before they can use their hands skillfully. This situation has troubled the Allies for some time. France is now trying to get Japanese weavers and textile operatives to come to that country to work in the mills which have had to be closed because of the scarcity of workmen.

For these and various other reasons it seems very improbable that there will be much wool to be worn by the civilian population next year. It is not likely that the Government will have to take measures to restrict the amount of wool used in manufacturing civilian clothing or enforce any change in the present way of doing business along that line. People will probably be able to get what they are willing to pay for, but the prices, based on the available supply, will be so high that they will not care to pay for all wool cloth. Instead, they will buy cotton and wool material which is now being woven in great quantity for the spring trade. Manufacturers have estimated that 25 per cent of raw wool may be saved in this manner. The material will have the appearance of all wool because the cotton is placed in the inside of the yarn, or on the back of the cloth. This the public will pay for at all wool prices and will be extremely thankful to get it when they compare their lot with that of the German civilians.

In Germany the aspirant for wearing apparel must go to the New Clothing Bureau in the district police station. There he is carefully questioned as to the amount of clothing which he already possesses before he is allowed to buy more. One suit, one hat, one pair of shoes, and two suits of underwear, only, are allowed at one time. They must be worn until they are absolutely worn out. Appearance, style, and fashion are things of the past with the German people.

The cotton situation is almost as bad as the wool situation, although the United States has the advantage as it grows more than half the cotton in the world. But even though there is a good supply to draw upon the war need is so great that the price of raw cotton has risen to alarming heights. This is not surprising when you consider that a bale of cotton is needed to fire one of the large guns, vast quantities are used

for the unbleached muslin and gauze used in Red Cross work, and a still greater amount is commandeered by the government for khaki uniforms and tents. For this reason when the cotton demand is considered it is doubtful if the use of cotton instead of wool for clothing can prove to be as much of an economic saving as at first seemed possible.

The use of linen as a substitute is more impossible still. Millions of yards of linen are needed for aëroplane wings, for it has been found to be the most satisfactory of any fibre for this use because of its strength. Cotton would be good for aëroplane wings as it is very elastic if it were not for its lack of strength and if it were not so inflammable, due to the oil contained in the fibres. Experiments are now being carried on by the Government to devise some way in which strength and fire proof qualities may be added to cotton. If that were possible then more linen would be released for surgical dressings and for thread for the army shoes. So far, cotton thread has not proved strong enough to stand the strain.

The reason for the shortage of linen is that much of the flax of the world has been grown near the German border and has been trampled down and broken by the warfare which has been going on there. Some flax has also been grown in Belgium, especially around Courtrai and that also has been ruined, as well as vast quantities which had been placed in the River Lys for retting before the German invasion. There is practically no flax grown for the fibre in the United States, so linen as a dress material will probably be out of the reach of most American buyers by next year.

Most of our silk comes to us from China and Japan and so the supply of that material should be little influenced by the war. At the present time the government uses silk only for balloon cases, but a series of experiments are being conducted at the front which may result in the use of all the silk which it is possible to procure. As the boys "Somewhere in France" are sent into the trenches they are provided with silk underwear. It is thought that silk will prove to be gas resisting and also will be less irritating to the wounds than cotton when driven into the body by shrapnel. For this reason the use of silk for suits and dresses will probably be restricted.

As wool, cotton, linen, and silk comprise the list of fibres which are commonly used for clothing, and as each has, or will have its place in war use, the result is that we in the United States who cannot take an active part in warfare must do our bit by conserving the supply of textiles.

The manufacturers will help us to do this by using as little material as possible in their ready to wear garments. Skirts will be comfortably narrow, suit coats will be short, single breasted with small lapels and collars. Ornamental revers, patch pockets, and belts will be eliminated. Conservative styles will be in vogue because people will know that whatever they buy this year they must expect to wear much longer than usual. They will realize that they would soon tire of extreme clothing.

Fashion and style to the average person seems rather a capricious subject governed by a few artists or dress designers in Paris. But in reality it is the reflection of a definite economic condition of the country or the world. In times of luxury people always wear extreme clothing. For ages past women have advertised the size of their husbands' pocket books by the clothing which they wear. For it is easier for a man to display his wealth by spending it upon the clothing of his wife and children than in any other way. This may be done by jewelry and also by means of clothing which is distinctly not utilitarian. The wives and daughters of the men of the Orient bind their feet to show their helplessness—their husbands and fathers proclaim to the world by this means that they are able to support the feminine members of their family in idleness. In our so-called more enlightened countries the women wear hobble skirts or long sweeping garments as well as high heeled shoes to show the ability of their husbands to support them in luxurious ease. It is manifestly impossible to the observer for any woman to scrub a kitchen floor in a trailing gown or to do a day's washing in a hobble skirt.

In times of luxury people always wear extreme clothing,—clothing which hampers freedom of movement such as hobble skirts, or tight skirts, or which are so voluminous that they get in the way. In the last few years the people of the United States have been especially prosperous; men have had enough money to buy automobiles, to pay for after theater suppers and to buy quantities of candy. With the use of automobiles and extravagant eating people grew fat and lazy, and as it is one of the general principles of dress design that full loose clothing is most becoming to a stout figure so very full skirts and coats naturally came into fashion. When women, because of the war, find that they must give up the use of automobiles and are obliged to go out into the world to do some definite work which their husbands and brothers who are now in the trenches have been doing in the past they will lose their

superfluous fat and grow slender again. That will be another reason for the popularity of the more tailored close fitting costumes.

All women will not be able to go out into the world to do definite war work. Some will not even be able to spend their afternoons at the various Red Cross branches. The duties of home and children will keep many tied down to more prosaic and perhaps less romantic work. For them mending and remodelling will be revived as a lost art, for during the next year we shall find that we must not only conserve in the textiles which we buy but also in the textiles which we already have stored away in our attics in the form of old clothes. The woman who has hoarded outgrown garments may find reason for rejoicing.

HELP THE HOUSEWIFE

LILLIAN P. RUSSELL

Every day one reads the familiar words that look out at us from store windows, confront us on posters, or greet us in the morning paper, "Help the Red Cross, Help the soldiers to win the war." May the name of housewife be added to the list of those needing help, for if the "war is to be won in the kitchen" then every one should have a part in the victory.

In many homes the planner of meals, whether she be the mother, older sister, aunt, or housekeeper needs just the support and encouragement which can be given by those for whom she is planning meals. She is doing her "bit" by getting the greatest value for money in both food and fuel. In her plans for "backing up Hoover" she provides war bread three or four times a week. Is it fair that she should be the one to eat up all leftovers, cold muffins for instance? The writer has experimented a little in that line, and has put on the table a plate of white bread and corn meal muffins, both a day old. Those of the family who for years have professed a fondness for cornmeal will invariably take the white bread and leave the other for the one who knows she must eat it or plan some "camouflage" in order not to waste it.

When bread and gravy or bread and jam are served, would it not be more patriotic to do away with the butter or butter substitute than to

use both at one time, even though one may have a special fondness for such dishes? The suggestion is naturally made that both need not appear at the same meal. That is very well if the planner of meals is the "money getter" also, but when others are perhaps paying for the food and demand "the best," the housewife needs the help that could be given by the little sacrifice entailed in curbing the appetite.

The sugar shortage has been a fine test for those trying to lighten the burdens of the housewife. Each one should ask himself the question "Did I help or did I make it just a little harder by demanding sweet things?"

One mother was forced to say that unless the members of the family took less sugar in their coffee she would have to sweeten the whole amount of coffee to be used, taking the sugar out of their reach. Perhaps she believed that "out of sight is out of mind."

But it is not fair or just that the housewife should do all the sacrificing for the entire family. She, of course, is the one most directly anxious to conserve food, and what a wonderful conservation there would be with the combined efforts of the family behind her. She could accomplish unheard of wonders in the culinary department.

At the beginning of the National Food Conservation Campaign, one of the speakers at a meeting said that the men were to be asked to sign a pledge, saying they were willing to aid their wives in their plans and methods of Food Conservation. How many of those pledges were signed? Far fewer than were signed by housewives is the belief of the writer. Yet it is only when the men of the family help as well as the children, that the work of conservation can be carried on effectively in the home.

Nor should it be necessary for the housekeeper to resort to tricks to disguise the substitutions she makes. The whole family should coöperate, and each do his share toward the saving of waste, the using of the necessary substitutes, and the clean plate. The lettuce under the salad, the crust of bread, the piece that used to be left for "manners," all should be used as a matter of course. The housemother's difficulties with the new 50–50 rule should be lessened by suggestion from the family and winning compliance, rather than increased by complaint and fault finding.

SERVING MEALS WITHOUT WHEAT

The loyal housekeeper has for the last few months been doing her best to substitute other grains for wheat. She has learned to like yeast breads made with one-fourth or one-third substitute flours or even 50–50 or perhaps she has used rye bread containing no wheat. Now a more difficult situation confronts her. Rye, next best to wheat for bread-making, is no longer more available than wheat, and wheat is so scarce that a definite allowance has been made of one and one half pounds a week for each person, this to include all wheat products; macaroni, wheat breakfast foods, bread, pie, cake, whether made at home or purchased at the bakery. This means one-fourth pound a day of victory bread (about four slices) with one-half pound (2 cups) of flour a week for any other purposes. Moreover since there are many people, especially among the working classes, who have depended very largely upon bread and will find it exceedingly difficult to adjust themselves to this program, it behooves everyone who possibly can to get along with less, even to the point of using no wheat at all.

Ways must be devised for using other things in the place of wheat. The simplest thing to do is to use more potatoes, hominy, rice, oatmeal, in place of bread. It is surprising how quickly one can become adjusted to such changes in the diet.

Double the usual portion of cereal for breakfast and serve no toast; for luncheon use rice, plain, cooked in milk, with raisins or dates, scalloped with cheese (with no flour thickening), seasoned with tomato, or mixed with meat; or use some form of corn as fried corn meal mush or hominy prepared in various ways like the rice, or use potatoes, but do not use bread. For dinner a double portion of potatoes, or potatoes and sweet potatoes, potatoes and rice, or potatoes and hominy will take the place of bread. Use barley flour, cornflour, cornstarch, rice flour, or rice water for thickening soups and sauces. Use barley, tapioca, or peas or beans, in soup, instead of macaroni or spaghetti and serve no croutons or crackers. Use for dessert fruit in various forms, gelatine dishes, or rice and tapioca puddings. Your bill of fare has been changed, little has been added to your labor, and wheat is saved.

If you can put in a little more time and want greater variety learn to use the other flours without any wheat in quick breads such as muffins and baking powder biscuit and in cake.

The Food Administration in an experimental laboratory, in coöperation with the Department of Agriculture, is working out some general

rules for substituting these flours so that you can use your own recipes and know how to modify them.

A good standard or basic rule for muffins is: 1 cup of liquid, 2 cups of flour, 1 tablespoon of fat, 1 tablespoon of sugar, 1 egg, 4 teaspoons of baking powder, $\frac{1}{4}$ teaspoon of salt. All muffin recipes are modifications of this. If sour milk is used a little less flour is needed (about $1\frac{3}{4}$ cups) and $\frac{1}{2}$ teaspoon of soda must take the place of half the baking powder. If a richer muffin is desired fat and sugar may each be increased to 3 tablespoonfuls. Sugar may be increased or lessened or corn syrup may be used in its place, and the egg may be omitted. This will change the character of the muffins somewhat but will not change very much the general proportions.

In using other flours for wheat, an equal amount *by weight* should be used. It is perfectly easy to leave out one fourth, or one half, or three fourths of the white flour and add in its place an equal weight of barley flour, buckwheat, rice flour, fine corn meal, or other flours. With care and a little practice any one of these can be used in place of all the white flour. The coarser uncooked cereals seem not to be very satisfactory if substituted for more than one fourth of the flour, but often such a cereal as rolled oats may be run through a hand mill and be used like the fine flour.

For those who have not scales this table of approximate weights has been made.

	ounces
1 cup white bread flour (113 grams)	=
1 cup barley flour (76 grams)	= 3
1 cup buckwheat flour (133 grams)	= 5
1 cup corn flour (109 grams)	= 4
1 cup cornmeal fine (114 grams)	= 4
1 cup cornmeal coarse (130 grams)	= 5
1 cup rolled oats (75 grams)	= 3
1 cup fine granulated oats (136 grams)	= 5

This shows that cornflour and fine cornmeal may be used practically measure for measure in place of flour; that of buckwheat, coarse cornmeal and finely ground oatmeal $\frac{5}{6}$ cup is equal to a cup of flour; and that it takes $1\frac{1}{3}$ cups of barley flour or rolled oats to equal a cup of white flour.

In using cooked cereals as flour substitutes allowances must be made for the water that they have taken up in cooking. This will differ according to the method of cooking. Generally not more than a quarter of the flour can be substituted by cooked cereals and a light muffin be made.

DOING MY LEVEL BEST

CLARENCE DU BOSE
United States Department of Agriculture

The farm is twenty miles from town—just an ordinary everyday sort of place. You might not select it as the setting for one of the inspiring incidents of the war. The woman is a modest, unassuming sort of person, too, and doubtless she would be immeasurably astonished if it were suggested that much importance be attached to the war rôle she is playing. But, suppose we decide that for ourselves. Suppose—since everyone is asking these days, "What can I do to help win the war?"—that we take a trip to the little twenty-mile-from-town farm and find out what one woman has done and is doing.

She is one of these kind-faced, gentle, motherly persons, and the advancing years have whitened her hair and diminished her vigor, but not her determination. Before the war she lived in ease and comfort in a large city, very far from this western state. For, although her girlhood and young womanhood had been spent on a farm, where she had been born, her circumstances had afterwards changed entirely. The farm became a dream of the long ago. And the years passed, and apparently they held for her only a peaceful approach of old age amid a well-ordered existence of undisturbed serenity.

Then came the war. It changed her as it changed everything. It touched her life as it touched every life. She wondered what she could do. She heard the Government's call for increased food production as a war necessity, and she heard of the shortage of farm labor. She appraised her own abilities. She knew that the things she could do best were the things it is necessary for a woman to do on a farm. She remembered the bygone years when she had been reckoned without an equal in her county as a farm home manager. Without the stimulus of the war, she would have quailed at undertaking again such strenuous and exacting duties. But under the inspiration of the new order of things her course seemed so clear, so obviously the only thing to do, that she debated the matter not at all. She simply bought a railroad ticket and telegraphed John and Mary that she was coming.

John and Mary, her daughter and son-in-law, lived on the little twenty-mile-from-town farm. They had written that some of the farm help had been lost because of the war, and that they were sore pressed to secure labor and maintain the maximum production of the place—

the production that must be maintained and increased if we win this war. She was thinking of that necessity—this kindly, gray-haired woman—when John met her at the lonely little station, and as they drove out to the twenty-mile-from-town farm, the farm where she has been since that day, and where she is now, working in the kitchen, preparing meals for the hands, relieving Mary of many household duties, increasing the farm's efficiency in many ways.

And this is how the United States Department of Agriculture happened to learn of the matter. One day she read in the *News Letter*, which is sent out weekly by the department, something that pleased her especially. So she wrote a letter to the Secretary, expressing her appreciation of that article, and of all the *News Letters* in general. This was very gratifying, but it was not the thing that gave the Secretary the greatest satisfaction. For her letter was made notable by its last lines, lines of sheer simplicity, added rather as an afterthought, it seemed—an incidental and unstudied expression that sums up in a sentence the war program that each of us must adopt, if we haven't already.

"I am going to be here as long as I am so much needed," she wrote. "It is fine to cook for hungry men, and I feel that perhaps I may be able in a small way, to help solve the labor problem. At any rate, I know what farm life is and I also know that an industrious farmer deserves the best. . . . . We are going to wash clothes today, and this evening there is a pig to be cut up, lard to be rendered, and sausage to be made. . . . . I am doing my level best to try to help everybody."

That was the letter that came from the little farm, twenty miles from town, written to the Secretary of Agriculture by a woman of elderly years who had left her comfortable, unburdened city home and sought the severities of a service where she "might be able in a small way to help solve the farm-labor problem."

"I am doing my level best," she said.

Are you doing as much?

We must ask ourselves that question—and answer it. The Nation is just you, and you, and you—all of us. And unless each person does his and her level best the Government can't solve the farm-labor problem, or any other war problem—or win the war.

EDITORIAL

The New Ration—21,000,000 bushels of wheat a month instead of 42,000,000 bushels. This country is slowly progressing toward the idea of the ration, as, one after another, certain foods become less available. We have become used to three pounds of sugar a month, now we are asked to limit ourselves to 6 pounds of wheat products.

50–50 buying and "victory" bread have failed to accomplish all that was hoped, partly because many have conformed only to the letter, not to the spirit of the law. Now we are asked to observe this new rule as a minimum. The Food Administration reminds us that many thousand families throughout the land are now using no wheat products whatever, except a very small amount for cooking purposes, and are doing so in perfect health and satisfaction. There is no reason why all of the American people who are able to cook in their own households cannot subsist perfectly well with the use of less wheat products than one and a half pounds a week, and the well-to-do households in the country are specially asked to follow this additional program in order that the necessary marginal supplies may be provided for those parts of the community less able to adapt themselves to so large a proportion of substitutes.

It seems inconceivable that, with a knowledge of the seriousness of the situation, any should still ask "why do we send wheat abroad instead of the less precious cereals." France and other allied countries for a long time have been using war bread with as small a percentage of wheat as it is possible to use,—bread that bears little resemblance in palatability to our "victory" bread.

Even if this were not true, why should we keep our best and send our worst, after all that France has done, and the little that we have been able to contribute? It is no longer the time to say "we can do this or that without hardship." It is time to preach sacrifice, and to make sacrifice willingly, thankful that we may be allowed to deny ourselves.

The need of this new ruling is emphasized by the speech of M. Tardieu, French High Commissioner to the United States, who said before

the Southern Commercial Congress meeting in Baltimore: "I am aware of what you have done in order to reduce your domestic consumption and to increase your exports. But you must do more. You must do it, for it is a case of necessity. You must do it because it needs to be done. Ask all American citizens who stand unanimously for the National ideal determined by the President, whether they do not deem that the time has come for new restrictions in consumption, in order to win the war. Restrictions, however strict they may be, are necessary in order that over there on the front where your troops are beginning to fight, where the whole of the great American Army will be in time, the situation on which final victory depends may be unaltered.

"We and our European allies, the British and the Italians, have been taught to suffer. Americans are now sharing our burden of blood and of death on the battle line, and we are requesting you in the rear to share as well our burden of suffering. In order that you and we may win the war, it is necessary that you here in America should all agree to a new effort and to new privations."

Buying 50-50. There still seems to be some misunderstanding in regard to the purpose of the 50–50 order. The 50–50 rule was not made in order to sell other cereals, but to save wheat. It means "buy less wheat flour," not "buy as much as before and take the substitute besides." Complaints that one is paying twice too much for flour because the cost of the other cereals is counted in, are quite out of place. Neither are these substitutes to be hoarded or destroyed. It is surprising how many intelligent people have failed to grasp the real situation and see how serious the shortage of wheat has become, and how necessary it is to conserve it in every way.

Everyone who understands the situation should do her best to make it clear to any neighbors or friends who are without this knowledge.

COMMENT AND DISCUSSION

THE PSYCHOLOGY OF "DO" AND "DON'T"

At a meeting of home economics leaders the proposal was once made that a faulty family dietary for a day should be set down and then analyzed and amended for the education of the house-wife. This suggestion met a chorus of protest, because "the psychology of 'Don't' is altogether bad." It seems that "Do" alone rouses to action.

This attitude, general as it doubtless is, leads to serious reflection on the part of those who were brought up under a sterner educational system than now prevails; to them such a view is suggestive of the popularity of the "glad" stories, and of the denial that wrong exists in the world. Is it no longer true that "facing the facts" is the only straight-forward way? and do not courageous people now as in the past build on their mistakes more surely than on their successes?

An excellent illustration of the older point of view is found in the report of Mrs. Johnson in the January number of the JOURNAL on the failure of the marketing clubs of Pittsburgh, an article that might well be read by every woman who has pondered on the distribution of food to the housekeeper, and schemed to eliminate that hated person the "middleman." Here are set down all the causes for the rise, decline, and fall of thirty-five marketing clubs, the rise and glowing future reported, we hear, in every case, to a woman's club whose membership too easily believed that a new way of doing business had been discovered; the decline watched in silence by a few faithful, indomitable workers; the fall, in all probability, not reported to the clubs that had acclaimed the rise, and were perhaps by that time following some new star of promise. The presentation of such a report would be considered "depressing" and we should doubtless hear that the psychology of it is all wrong. Have we not heard of the colored preacher of "befor de wah" time who declined to allude in his sermon to the wickedness of chicken stealing because "it would t'row a coldness on de meetin'?"

The history of the marketing clubs is a familiar story to those who have seen many stars rise and set. We must be forgiven for asking in some discouragement whether we are ever to get ahead on any program that calls for intelligent adjustment of the various functions of the home to the business and social life that goes on around us. Are we not to build stone upon stone a solid structure made of published records of the progress and results of such experiments? Not until we take

them more seriously, not until we develop a sense of loyalty to social advancement which is quite above our personal sensitiveness as to what we call success or failure. "I have been connected with so many failures" said a woman of noble qualities as a social worker. Face all such with this truth: there is no *failure* in any honest attempt, if only full records be kept on which other efforts of the kind can be built.

Such a report as Mrs. Johnson has given is a very valuable addition to our meager stock of social statistics, one that should be soberly studied by all women who propose to amend long established customs. Interest, enthusiasm, devotion to a good cause, are precious above measure; to prevent their waste on schemes that have been proved impossible, if we only knew it, and to prevent the discouragement that follows *needless* failure is a very important part of a social program. Projects that fail as well as those that succeed should be followed up and reported with absolute fidelity, and the causes of failure should be duly analyzed in order that others may not waste their efforts in a barren field. This is the method of the scientist. He may have spent a year on an experiment that brings him only "negative results," but he publishes these results if they can guide or help other workers.

It means careful study of the ground before an enterprise is launched, with reading of all records of previous attempts, keeping record of each step and publishing report of results, *whatever those results may be.* Suppose this method had been followed regarding, for instance, experiments in coöperative housekeeping, we should not see every fifteen or twenty years a fresh trial of it by an enthusiastic band of women who have not the advantage of the lessons learned in a dozen former ventures. For, let it be noted, these costly experiments are always a goodly number of years apart, so that those who promoted them have passed off the active stage, and there are no *records!*

What of the food boycott? Was the principle involved either proved or discredited? No one seems to know. Will some one of long memory in these fields of social experiment bring out the whole list of the last half century "with historical and critical notes" to use the library expression? From every one of these so-called failures some kernel of valuable experience is to be extracted.

MARY H. ABEL.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

The Food Problem. By VERNON KELLOGG AND ALONZO E. TAYLOR. (Introduction by Herbert Hoover.) New York: The Macmillan Company, 1917, pp. 213. $1.25. By mail of the Journal, $1.35.

Though not a large volume, this is really two books in one; Part I deals with "The Problem and the Solution" and Part II with "The Technology of Food Use."

The authors, both well known scientific men, have had unusual opportunities to become familiar with the food problem from their years abroad during the war and their connection with the Food Administration.

Aside from its bearing upon war conditions, no book published recently has presented the different phases of the food question in so tangible a form as this, or in a way so well adapted to use by all sorts of people.

For example—It is invaluable for the speaker on Food Conservation.

It might be used as a text-book, to unify other courses, even for advanced students in home economics.

The chapters on the food situation, in this and other countries, should be read—and studied—by dealers and distributors of food.

"The Physiology of Nutrition," chapter V, gives just the condensed information that every intelligent person needs, without the dry-as-dust details, which are often thought essential, but which repel rather than attract to further study.

Doubtless there are many statements which like railroad time-tables are "subject to change without notice."

The conclusion, "Patriotism and Food" (see p. 123) wholly, or by single paragraphs and sentences, deserves to be used in general propaganda—perhaps even printed on the wrapping paper used in groceries and markets.

ANNA BARROWS.

Food Demonstration Work for Congested City Neighborhoods. Charity Organization Society, 105 East 22nd Street, New York City.

Last spring the Advisory Committee on Home Economics of the New York Charity Organization Society, conducted an experimental series of food demonstrations in various parts of New York City. Detailed records were kept of the attendance, the recipes prepared, the special diet recommendations made, the points which seemed to arouse the greatest interest in the audience, suggestive comments made by the women, and criticisms by social workers who assisted in arranging for the demonstration.

This material has been presented in pamphlet form and is available in limited supply for distribution among home economics workers or others interested in popular instruction through demonstration.

The Baby's Food. By ISAAC ABT, M.D., Philadelphia: W. B. Saunders & Co. 1917, pp. 143. $1.25.

"The Baby's Food" consists largely of a collection of recipes for preparing foods which may be used for young children or invalids. While it is of considerable interest, because it contains recipes for preparing baby foods, especially those less familiar preparations, such as Finkelstein's Eiweiss Milk, Kellar's Malt Soup, and pegnin milk, which are not easily available to the mother or practicing physician, the book is on the whole unfortunately named.

The title suggests not only methods of preparing food for the baby (from birth to one and one-half years), but conditions in which various foods may be used. In this it is disappointing. At least 50 per cent of the pages are devoted to recipes for dishes other than those usually considered suitable for babies. There are included also suggestive diet lists for children of different ages and conditions, as well as directions for various types of baths and packs.

The Home Nurse's Handbook of Practical Nursing. By CHARLOTTE A. AIKENS. Philadelphia: W. B. Saunders Company, revised ed., 1917, pp. 303. $1.50.

This book has recently appeared in a revised and enlarged edition. Valuable material has been added, including notes on the care of premature infants, of aged, chronic, and tuberculous patients, and of persons suffering from mental disorders.

This book, as the preface states, is designed for "the home girl or woman who seriously desires to do her best for the health of her own family, and as a working textbook for the 'practical' nurse or trained attendant." It contains much useful information, admirable in its practical good sense, and giving clear evidence of coming from well-interpreted personal experience. To any nurse, trained as well as untrained, such information can hardly fail to be profitable.

It is a pity that the book, with all its merits, should be marred by poor organization of subject matter, and very seriously marred by lack of scientific accuracy. It seems incredible that the author should be ignorant of modern theories of disease transmission; yet ignorance of facts now well established seems the only adequate explanation of statements such as "The germs of disease of various kinds are always found in the air" (page 16), and "they [the disease germs] flourish wherever dirt is allowed to collect, ... and are readily carried about in the air by means of floating dust" (page 16). Transmi sion of pat ogenic germs by nose and mouth spray, now considered one of the mo t important routes of infection, is entirely omitted from the list of common ways by which diseases are spread, although two routes included in the list, dust and soiled boots, are of minor importance in disease transmission, if not entirely negligible. The distinction made between disease germs and "good" germs, is puerile. Some acquaintance with modern theories of immunity would result in a modification of statements on page 15. It is surprising also that detailed directions for formaldehyde fumigation are included, considering that the practice has now been abandoned as ineffectual by most progressive Boards of Health. Examples of erroneous and misleading statements might be multiplied.

The "home nurse" or "practical nurse" is an unstandardized person. Some "practical" nurses have had a sound though limited training, and can safely perform the simpler technical nursing procedures, but it is clear that Miss Aikens has constantly in mind those with little or no technical training. In the hands of such women this book may prove a real danger, since it includes directions for treatments that no untrained woman can perform without endangering her patient. An example is catheterization, a treatment that if improperly performed may cause acute and prolonged suffering. Yet full directions for catheterization are given, and they are not sufficiently safeguarded by the statement that "few home nurses will have to use the catheter until asked to do so and shown how by a doctor or fully trained nurse." Moreover, the home nurse without restriction is directed to catheterize maternity patients if catheterization is needed.

Miss Aikens' book, in spite of its conspicuous faults, contains much that is useful, sensible, and practical; it is clearly written, and the illustrations are among the best in any textbook on nursing. But it presents an element of real danger, and at best it does not fill our need for an adequate textbook on home care of the sick.

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Simmons College.

BOOKS RECEIVED

Bugle Calls of Liberty. Our National Reader of Patriotism. By Gertrude Van Duyn Southworth and Paul Mayo Paine. Syracuse, N. Y.: Iroquois Publishing Co., Inc., 1917, pp. 179. $0.60. Discount to schools purchasing six or more copies.

Constructive Sewing. Books III and IV. By Mary E. Fuller. Indianapolis: Industrial Book and Equipment Co., 1917, pp. 90. $0.60.

Cooking and Sewing Outline. By Fay Morgan Rudd and Francesca E. Kayser. Birmingham: Tennessee Coal, Iron & Railroad Company, 1917, pp. 115.

The Cost of Food, a Study in Dietaries. By Ellen H. Richards. Third ed., revised under the direction of John F. Norton. New York: John Wiley & Sons, Inc., 1917, pp. 137. $1.00.

The Food of Working Women in Boston. Lucile Eaves, Ph.D. Boston: Women's Educational and Industrial Union, 1917, pp. 213. $1.00.

The Housekeeper's Apple Book. By L. Gertrude MacKay. Boston: Little, Brown & Co., 1917, pp. 122. $0.75.

Manual for Army Cooks, 1916. Washington: Government Printing Office, 1917, pp. 254.

Manual for the Quartermaster Corps, U. S. Army, 1916. Washington: Government Printing Office, 1917, 2 volumes and appendix, pp. 640, 594. (Contains illustrations of kitchen car equipment and army field range, and tables showing army rations.)

Marketing and Housework Manual. By S. Agnes Donham. Boston: Little, Brown & Co., 1917, pp. 235. $1.50.

Society, Its Origin and Development. By Henry Kalloch Rowe, Ph.D. New York: Charles Scribner's Sons, 1916, pp. 371. $1.50.

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Issued by the Department of the Interior:

Lessons in Community and National Life. Community Leaflets Nos. 7, 8 and 9 (Bureau of Education).

Garden Clubs in the Schools of Englewood, New Jersey. Charles Orchard Smith. Bulletin, 1917, No. 26 (Bureau of Education).

Issued by the U. S. Department of Agriculture:

Mimeographed leaflets in connection with home economics and extension work as follows: Corn festivals; Sugar saving campaign; Home demonstration work—standardization of recipes; Suggested program for urban home demonstration work with special reference to conservation; Fuel saving in the home; Conservation of clothing; Care of house and equipment; Home demonstration work—(1) Suggestions for use of canned and dried foods, (2) Suggestions for clothing, fuel, money, and strength conservation campaigns, (3) Suggestions for food conservation campaigns under the leadership of a home demonstration agent.

The Digestibility of the Dasheen. C. F. Langworthy and A. D. Holmes. Bulletin No. 612 (States Relations Service).

The Utilization of Waste Tomato Seeds and Skins. Frank Rabak. Bulletin No. 632 (Bureau of Plant Industry).

Report of the Chemist for the fiscal year ended June 30, 1917 (Bureau of Chemistry).

Issued by the Department of Commerce:

Materials for the Household. Circular of the Bureau of Standards. No. 70.

Issued by the U. S. Public Health Service:

Public Health Administration, with special reference to towns and rural communities. Paul Preble. Reprint No. 390 from the Public Health Reports.

Typhoid Fever and Municipal Administration. A. W. Freeman. Reprint No. 395 from the Public Health Reports.

Issued by the Federal Board for Vocational Education:

Statement of Policies. Bulletin No. 1. Annual report for 1917.

Issued by Purdue University:

Common Foods Grouped According to Chief Food Constituent. A kitchen card.

Three Meals a Day. Helen Gertrude Gates. Leaflet No. 74.

Home Canning. Roberta McNeill. Extension Bulletin Nos. 32 and 55.

Home Drying of Vegetables and Fruits. Lella R. Gaddis. Leaflet No. 75.

Helps on Gardening and Canning. H. J. Reed and Lella R. Gaddis. Extension Bulletin No. 54.

Home Economics Study Classes. Roberta McNeill. Leaflet No. 54.

Helps for Club Members—Sewing Clubs. Mary L. Matthews and Lella R. Gaddis. Extension Bulletin Nos. 23 and 37.

Floors and Floor Coverings for the Farm Kitchen. Compiled by Mabel L. Harlan. Leaflet No. 69.

Issued by the publishers listed:

A number of leaflets containing suggestions and recipes for food substitutes. The Women's Municipal League of Boston.

Food Supply in Families of Limited Means. Report written by Michael M. Davis, Jr. League for Preventive Work, Boston.

Steam Pressure for Home Cooking. Alice E. Skinner and Ida E. Rigney. Home Economics Bulletin II. Kansas State Agricultural College, Manhattan.

Yeast Bread and its Variations. Jennie R. Bear. Bulletin No. 1731. University of Texas, Austin.

How to Grow the Peanut and 105 Ways of Preparing it for Human Consumption. G. W. Carver. Bulletin No. 32. Tuskegee N. and I. Institute, Tuskegee, Ala.

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Break the "Return Goods" Habit. *Housewives' Mag.*, July, 1917.

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Special War Duty for Home Economics Teachers. *Off. Bul.*, November 9, 1917.

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Psychology of the Woman Shopper. *Lit. Digest*, December 29.

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Cotton Yarns and Cotton Fabrics in Demand. *Dry Goods Economist*, December 15, 1917.
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NEWS FROM THE FIELD

News from the Food Administration. In November the Food Conservation Division of the Food Administration was reorganized and the title changed to Home Conservation Division. Miss Sarah Field Splint, the editor of *Today's Housewife*, who had acted as Dr. Wilbur's assistant from the early organization of the work in Food Conservation, was made director of the division.

Since Home Conservation is a part of Home Economics instead of Home Economics a part of Conservation, the Home Economics section as such was disbanded, and Miss Lord, who was acting as chief, returned to her work at Pratt. Of the other members of the section, Miss Bevier, Miss Miller and Miss Bernhardt (who is looking after correspondence) became part of the Home Conservation Division, and Mrs. Norton and Miss Orr were transferred to the Public Information Department.

Miss Elizabeth Sprague of the University of Kansas came to the Food Administration the first of January to take the place of Miss Isabel Bevier, whose two months of leave of absence had expired. Miss Sprague is to remain for an indefinite time. Among many other duties she has done much of the planning for the College Courses in Food Conservation, has aided in formulating the "voluntary ration," and is establishing an experimental laboratory kitchen in connection with the Department of Agriculture, where the use of the various "substitutes" may be tried out and the recipes standardized. Miss Harriet Edgeworth and Miss Ethel Loflin are acting as her laboratory assistants,

Miss Jenny H. Snow, Supervisor of Household Arts of the Chicago Public Schools, was called to the Food Administration for a week in January, for consultation. Miss Katharine Blunt of the University of Chicago is in Washington helping in the preparation of the Conservation Courses for Colleges, and Miss Frances Swain of Chicago Normal College, is assisting in the same work for a short time. Miss Elizabeth Miller returned to Chicago at the end of December.

Miss Sarah Arnold of Simmons College is on leave of absence, and is to be with the Food Administration in Washington indefinitely. She is at present speaking for the Administration.

On March 1 Miss Martha Van Rensselaer of Cornell University, who has maintained a close connection with the Food Administration from its beginning, assumed the position of Director of the Food Conservation Division, to take the place of Miss Splint, whose duties have called her back to New York.

A War Program. The war has laid sudden and unexpected demands upon the organizations that are engaged in work for mothers and little children. Some are hampered by lack of funds, practically all by the scarcity of doctors and nurses. The increased responsibilities are being faced with the courage that comes of the conviction that no more patriotic service can be rendered just now than through the maintenance of the integrity of the home and the conservation of the health of the children of today—the citizens of tomorrow.

The program of the Eighth Annual Meeting of the American Association of Study and Prevention of Infant Mortality, held at Richmond, Va., October 15–17, 1917, under the presidency of Dr. W. C. Woodward of Washington was arranged with special reference to these needs. The meeting was a practical, get-together conference

of workers in the field of infant and maternal welfare. Representatives were present from 24 States, the District of Columbia and Canada.

The interest created by the courses on maternal, infant, and child care given by the Home Economics Departments of many of the state colleges and universities, and the corresponding demand for standard courses in such care, which would measure up to the highest ideals of specialists and research workers, was brought out in the session on Public School Education, presided over by Mrs. Norton, the Editor of the Journal, in the absence of Mrs. Henrietta W. Calvin, Chairman of the Section. The summaries of papers by Miss Alice Ravenhill on the "Education of College and University Women for Giving Instruction in the Care of the Health of Infants, Children, and Mothers," and by Miss Mary H. Mayer, on "Extension Courses in Public Schools for Adult Women in the Care and Feeding of Children" were followed by discussions by Mrs. Max West of the Children's Bureau, Washington, and others. On the recommendation of the Section, a committee, with Mrs. Max West as Chairman, has been appointed by the Association, to formulate courses in prenatal, maternal, infant, and child care, for the use of home economics teachers, colleges, universities, normal schools, graded schools, clubs, and classes.

Backing up the Boy in Khaki. The American Red Cross, under an agreement reached with the Y. M. C. A., has completed plans for a standardized recreation hut to be established at base hospitals and several American training camps in France. Under the agreement, the Red Cross is to furnish the building and all the equipment and the Y. M. C. A. is to combine its recreational facilities with the Red Cross in operating the hut. Both organizations are to be represented by a staff at each hut.

The buildings are one story weatherproof structures and contain a social hall and a billiard and pool room. The social hall is used as a lounging, reading, general recreation room, and for entertainments of various sorts. It seats 600 people comfortably. Chess, checkers, and other indoor games add to its attractions. A piano and victrola with American records are also parts of the equipment.

The billiard room contains one billiard and one pool table with a complete assortment of cues and necessary accessories. Proper lighting facilities are a part of the equipment, thus assuring "all the comforts of home" to the followers of this sport.

The main entrance to the building opens on a reception hall, with adjoining offices for the Red Cross and Y. M. C. A. attendants. Here information of all kinds may be obtained and the details of the management worked out.

At the other end of the building is the canteen, operated by the Y. M. C. A. Tobacco, sweets, and various other articles will be sold here. To the rear of the canteen is a dining room, kitchen, and sleeping rooms for the use of nurses as a club. They are supplied with comfortable furniture, writing tables, piano, magazines and other reading material.

The Y. M. C. A. is arranging a series of lectures, musical and other entertainments, which will bring some of the best talent in America to these huts. Besides furnishing all the equipment the Red Cross has also supplied cinema and weekly series of films to be shown in the social hall certain nights a week, and has also installed a circulating library of selected books.

The Red Cross also takes care of the recreational wants of those patients in the hospital who are unable to visit the recreational hut. It distributes free to the patients tobacco, cigarettes, reading and writing material, and has installed phonographs in the wards.

Through the joint operation of these huts by the Red Cross and the Y. M. C. A., America's convalescent soldiers and training camp students will be able to enjoy the benefits and facilities of both organizations.